



U.S. Department
of Transportation
**Pipeline and
Hazardous Materials
Safety Administration**

**COMPETENT AUTHORITY CERTIFICATION
FOR A TYPE B(U)
RADIOACTIVE MATERIALS PACKAGE DESIGN
CERTIFICATE USA/0337/B(U)-96, REVISION 16**

East Building, PHH-23
1200 New Jersey Avenue Southeast
Washington, D.C. 20590

**REVALIDATION OF UNITED KINGDOM COMPETENT AUTHORITY
CERTIFICATE GB/2773A/B(U)-96**

This certifies that the radioactive material package design described is hereby approved for use within the United States for import and export shipments only. Shipments must be made in accordance with the applicable regulations of the International Atomic Energy Agency¹ and the United States of America².

1. Package Identification - Croft Associates Model 2773A (SAFSHIELD).
2. Package Description and Authorized Radioactive Contents - as described in United Kingdom Certificate of Competent Authority GB/2773A/B(U)-96, Issue 3 (attached).
3. General Conditions -
 - a. Each user of this certificate must have in his possession a copy of this certificate and all documents necessary to properly prepare the package for transportation. The user shall prepare the package for shipment in accordance with the documentation and applicable regulations.
 - b. Each user of this certificate, other than the original petitioner, shall register his identity in writing to the Office of Hazardous Materials Technology, (PHH-23), Pipeline and Hazardous Materials Safety Administration, U.S. Department of Transportation, Washington D.C. 20590-0001.
 - c. This certificate does not relieve any consignor or carrier from compliance with any requirement of the Government of any country through or into which the package is to be transported.

¹ "Regulations for the Safe Transport of Radioactive Material, 1996 Edition (Revised), No. TS-R-1 (ST-1, Revised)," published by the International Atomic Energy Agency(IAEA), Vienna, Austria.

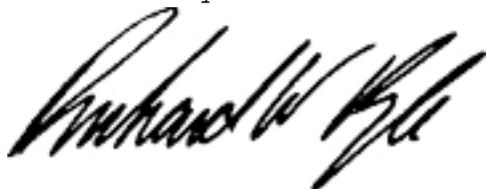
² Title 49, Code of Federal Regulations, Parts 100-199, United States of America.

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- d. Records of Quality Assurance activities required by Paragraph 310 of the IAEA regulations¹ shall be maintained and made available to the authorized officials for at least three years after the last shipment authorized by this certificate. Consignors in the United States exporting shipments under this certificate shall satisfy the applicable requirements of Subpart H of 10 CFR 71.
4. Special Conditions -
- a. Radioactive contents must have been shown to be special form.
- b. Package must be handled, operated and maintained in accordance with Croft Associates Packing and Handling Instructions for Package Design No. 2773A, CPI 006, Issue O and CSP 002 Issue K.
5. Marking and Labeling - The package shall bear the marking USA/0337/B(U)-96 in addition to other required markings and labeling.
6. Expiration Date - This certificate expires on June 30, 2015. On September 30, 2010, this certificate supersedes all previous revisions of USA/0337/B(U)-96.

This certificate is issued in accordance with paragraph 808 of the IAEA Regulations and Section 173.473 of Title 49 of the Code of Federal Regulations, in response to the June 24, 2010 petition by Croft, Inc., Los Alamos, NM, and in consideration of other information on file in this Office.

Certified By:



Dr. Magdy El-Sibaie
Associate Administrator for Hazardous Materials Safety

Jul 16 2010
(DATE)

Revision 16 - Issued to endorse, with restrictions, United Kingdom certificate no. GB/2773A/B(U)-96, Issue 3.



Certificate of Approval of Package Design for the Carriage of Radioactive Materials

THIS IS TO CERTIFY that the Secretary of State for Transport being, for the purposes of the Regulations of the International Atomic Energy Agency, the Competent Authority of Great Britain in respect of inland surface transport and of the United Kingdom of Great Britain and Northern Ireland in respect of sea and air transport and the Department of the Environment for Northern Ireland being the Competent Authority of Northern Ireland in respect of inland surface transport, have approved the Package design as specified in section 1 of this certificate, as applied for by Croft Associates Limited (see section 6)

as Type B(U)

by all modes of transport

Packaging identification: SAFSHIELD

Packages manufactured to this design meet the requirements of the regulations and codes on page 2, relevant to the mode of transport, subject to the following general condition and to the conditions in the succeeding pages of this certificate.

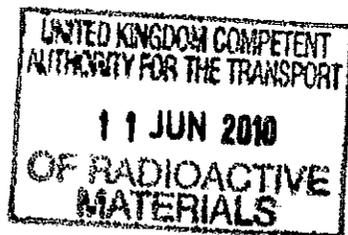
In the event of any alteration in the composition of the package, the package design, the quality assurance programme(s) associated with the package or in any of the facts stated in the application for approval, this certificate will cease to have effect unless the Competent Authority is notified of the alteration and the Competent Authority confirms the certificate notwithstanding the alteration.

Expiry Date: This certificate is valid until the end of June 2015 (see section 6)

COMPETENT AUTHORITY IDENTIFICATION MARK:

Type B(U)

GB/2773AB(U)-96



D. Vince
for Transport Radiological Adviser
Department for Transport
Great Minster House
76 Marsham Street
London SW1P 4DR

*On behalf of the Secretary of State for Transport,
and the Department of the Environment for Northern Ireland*

This certificate does not relieve the consignor from compliance with any requirement of the government of any country through or into which the package will be transported.

REGULATIONS AND CODES OF PRACTICE GOVERNING THE TRANSPORT OF RADIOACTIVE MATERIALS

INTERNATIONAL

International Atomic Energy Agency (IAEA)

TS-R-1 Regulations for the Safe Transport of Radioactive Materials 2005 or 2009 Editions.

International Maritime Organisation (IMO)

International Maritime Dangerous Goods (IMDG) Code Amendment 34-08.

International Civil Aviation Organisation (ICAO)

Technical Instructions for the Safe Transport of Dangerous Goods by Air 2009-2010 Edition.

United Nations Economic Commission for Europe (UNECE)

European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR) 2009 Edition.

Intergovernmental Organisation for International Carriage by Rail (OTIF)

Convention concerning International Carriage by Rail (COTIF) Appendix C. Regulations concerning the International Carriage of Dangerous Goods by Rail (RID) 2009 Edition.

UNITED KINGDOM

ROAD

GREAT BRITAIN ONLY.

The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009, SI 2009 No 1348.

NORTHERN IRELAND ONLY.

The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations (Northern Ireland) 2010, SR 2010 No 160.

RAIL

GREAT BRITAIN ONLY.

The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009, SI 2009 No 1348.

SEA

British registered ships. All other ships whilst in United Kingdom territorial waters. The Merchant Shipping (Dangerous Goods and Marine Pollutants) Regulations 1997, SI 1997 No 2367; Merchant Shipping Notice No MSN 1820 M, "The Carriage of Dangerous Goods and Marine Pollutants in Packaged Form - Amendment 34-08 to the International Maritime Dangerous Goods (IMDG) Code".

AIR

The Air Navigation Order 2005, SI 2005 No 1970. The Air Navigation (Dangerous Goods) Regulations 2002, SI 2002 No 2786. The Air Navigation (Dangerous Goods) (Amendment) Regulations 2009, SI 2009 No 1492.

08/09/065
2009/09/065

1. PACKAGE DESIGN SPECIFICATION

The Package Design Specification shall be in accordance with Croft Associates Limited Safety Report reference "1996 Design Safety Report for Package Design No. 2773A issue G", dated 28 May 2010.

1.1 Specification of Design

Design No.	Title (number of components)	Drawing / Drawing List	Issue
2773A	Package Design comprising: 2773 Casket (one) 2774 Flask (one)	DL-0C-1247	T

1.2 Authorised Contents

- a) 26.2g (not exceeding 1100 TBq) of Cobalt 60; or 1170g (not exceeding 1800 TBq for non-special form and 3780 TBq for special form) of Caesium 137; or 8.8g (not exceeding 1800 TBq for non-special form and 3000 TBq for special form) of Iridium 192.
- b) Cobalt 60 or Iridium 192 must be in the form of metal discs, pellets or rods and Caesium 137 must be caesium chloride in the form of loose or compressed powder or cast slugs.
- c) The contents shall be contained either in sealed metal capsules constructed so that they can be opened only by destroying the capsule, or in screw-topped metal containers which have been lock-welded or otherwise positively fastened to ensure that the closure cannot become loose or detached under normal or accident conditions of transport.
- d) The total rate of heat generation shall not exceed 462 W.
- e) The package may be transported empty of contents.

1.3 Package Dimensions and Weights

- a) Nominal Dimensions: 1035mm diameter x 1397mm high (see section 5 for package illustration)
- b) Maximum authorised gross weight: 4070 kg

2. USE OF PACKAGE

2.1 Use of packaging

- a) The packaging shall be used, handled and maintained in accordance with CPI 006 issue O and CSP 002 issue K.

2.2 Actions prior to shipment

- a) Administrative controls shall ensure that the contents are in accordance with section 1 of this certificate, and that the consignor and consignee hold a copy of the instructions on the use of the packaging.

2.3 Emergency Arrangements

- a) Before shipment takes place, the consignor shall have drawn up suitable emergency plans, copies of which shall be supplied to the UK Competent Authority on demand.
- b) If the consignor's own, or other approved emergency plans cannot be initiated, for any reason, then the police shall be informed immediately and requested to call the local NAIR (National Arrangements for Incidents involving Radioactivity) establishment.

3. QUALITY ASSURANCE

3.1 Quality assurance programmes applicable to this design are:

- a) Croft Associates' Quality Assurance Manual; and
- b) any other quality assurance programmes associated with the design, manufacture, testing, documentation, use, maintenance and inspection, and for transport and in-transit storage operations, that also comply with national or international standards for quality assurance which are acceptable to the authority named on page 1 of this certificate.

3.2 No alterations shall be made to the quality assurance programmes associated with this design and approved by the authority named on page 1 of this certificate unless that alteration has the prior approval of said authority, or it falls within the agreed change control procedures of that programme.

3.3 No quality assurance programme shall be used at any stage of the design, manufacture, testing, documentation, use, maintenance and inspection, and for transport and in-transit storage operations, unless said programme forms part of or is the quality assurance programme approved by the authority named on page 1 of this approval certificate.

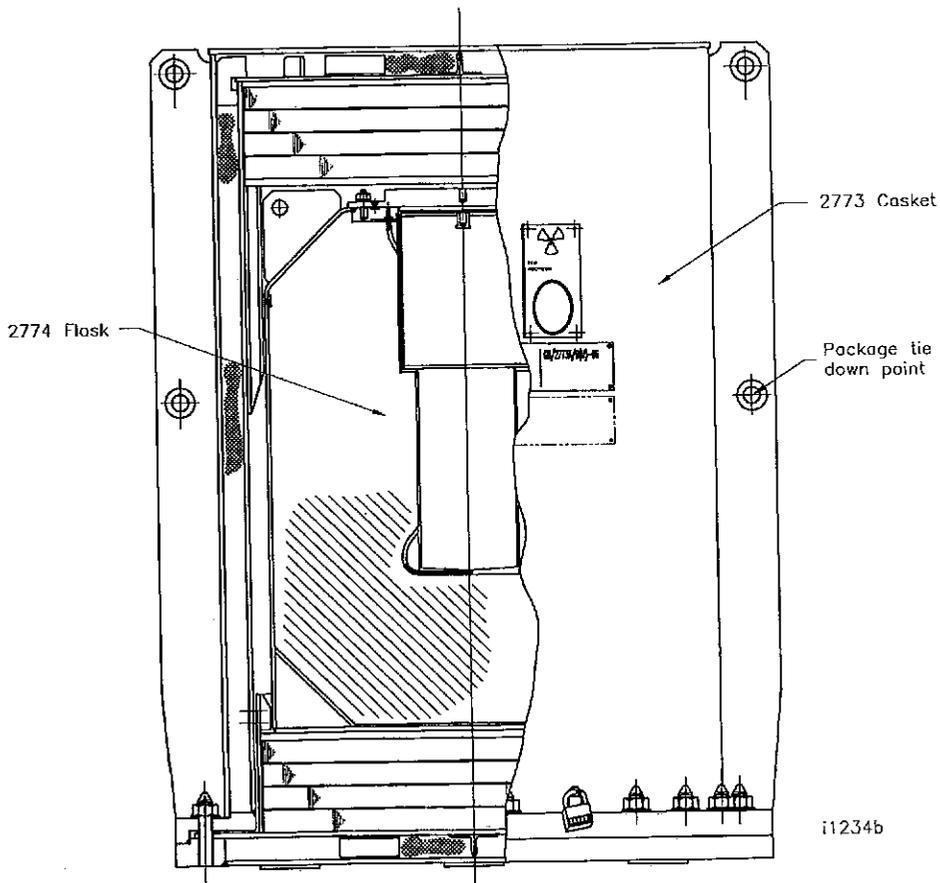
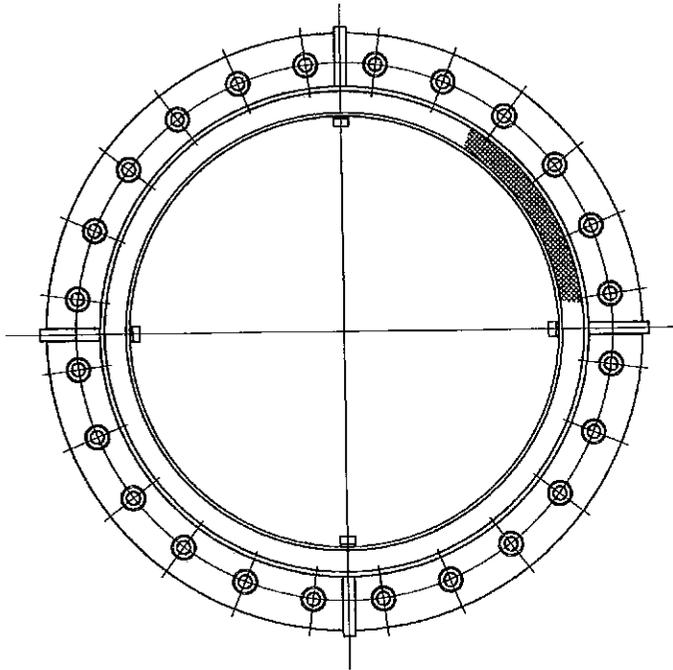
4. ADMINISTRATIVE INFORMATION

4.1 Other related certificates (none at this time)

4.2 Additional Technical Data / Information

- a) At the time of compilation of this design approval certificate, The Ionising Radiations Regulations 1999, SI 1999 No 3232 and Approved Code of Practice apply, with regard to radiation protection, to all modes of transport and The Dangerous Substances in Harbour Areas Regulations 1987, SI 1987 No 37, apply in UK Ports

5. PACKAGE ILLUSTRATION



6. CERTIFICATE STATUS

Design Approval issued to:-

Croft Associates Limited
 B2 North Culham Estate
 Abingdon
 Oxfordshire
 OX14 3GY
 England

Tel: +44 (0)1865 407740

Issue No.	Date of Issue	Date of Expiry	Reason for Revision
GB/2773A/B(U)-96 Issue 1	25 September 2003	End September 2006	Design approval issued under new regulations.
GB/2773A/B(U)-96 Issue 1	14 September 2006	End December 2006	Extension of Issue 1 certificate.
GB/2773A/B(U)-96 Issue 2	02 January 2007.	End December 2009.	Renewal and update of documentation.
GB/2773A/B(U)-96 Issue 2	19 November 2009	End September 2010	Extension of Issue 2 certificate
GB/2773A/B(U)-96 Issue 3	As on page one of this certificate.	As on page one of this certificate.	Renewal and update of documentation.



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Safety Administration**

CERTIFICATE NUMBER: USA/0337/B(U)-96, Revision 16

ORIGINAL REGISTRANT(S):

Dr. Robert Vaughan
President
Croft, Inc.
240 Camino Encantado
Los Alamos, 87544
USA

REGISTERED USER(S):

Mr. Troy Hedger
Alpha-Omega Services
9156 Rose Street
Bellflower, 90706
USA